

WHAT IS CLAIMED IS:

1. An ink jet recording head comprising:
  - a recording element base plate provided with a plurality of recording elements for discharging recording liquid, and a plurality of supply ports arranged on the face opposite to the surface having said recording elements thereon for supplying said recording liquid to said recording elements;
  - 5 at least one recording element unit having a portion for said recording element base plated to be incorporated, and a wiring base plate to apply electric pulses to said recording element base plate for discharging said recording liquid when being connected with said recording element base plate; and
  - 10 a supporting member for holding and fixing said recording element base plate, wherein said supporting member is provided with a plurality of supply flow paths for supplying said recording liquid to each of said supply ports of said recording element base plate, respectively, and the flow path width of each of said supply flow paths is formed to be smaller than the opening width of inlet portion of each of said supply ports.
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- 20 2. An ink jet recording head according to Claim 1, wherein each of said supply ports of said recording element base plate is formed in taper to make the width

of flow path gradually smaller from the inlet portion of said supply port to the outlet portion.

5       3. An ink jet recording head according to Claim 1, wherein said recording element base plate and said supporting member are bonded by use of bonding agent.

10      4. An ink jet recording head according to Claim 3, wherein each step created between said supply flow paths and said supply ports is buried by said bonding agent.

15      5. An ink jet recording head according to Claim 3, wherein said bonding agent has the property of being hardened by the irradiation of ultraviolet rays and the property of being hardened by heating.

20      6. An ink jet recording head according to Claim 5, wherein the discharge port plate arranged to face said recording element base plate for discharging recording liquid is formed by transparent material.

25      7. An ink jet recording head according to Claim 1, further comprising:  
          a supporting plate existing inclusively between said wiring base plate and said supporting member to hold and fix said wiring base plate.

8. A method for manufacturing an ink jet recording head provided with a recording element base plate provided with a plurality of recording elements for discharging recording liquid, and a plurality of supply ports arranged on the face opposite to the surface having said recording elements thereon for supplying said recording liquid to said recording elements; at least one recording element unit having a portion for said recording element base plated to be incorporated, and a wiring base plate to apply electric pulses to said recording element base plate for discharging said recording liquid when being connected with said recording element base plate; and a supporting member for holding and fixing said recording element base plate, comprising the following steps of:

coating on the bonding face of said supporting member and said recording element base plate the bonding agent having the property of being hardened by the irradiation of ultraviolet rays and the property of being hardened by heating;

forcing out said bonding agent from the bonding face of said recording element base plate and said supporting member to the areas extending out in each supply port of said recording element base plate by compressing said recording element base plate and said supporting member to each other; and

positioning and fixing said recording element base plate to said supporting member by irradiating said bonding agent forced out from said bonding face to harden said bonding agent.

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9. A method for manufacturing an ink jet recording head according to Claim 8, wherein the discharge port plate arranged to face said recording element base plate for discharging recording liquid is 10 formed by transparent material.

10. A method for manufacturing an ink jet recording head according to Claim 9, wherein the step of coating said bonding agent on the bonding face of 15 said recording element base plate and said supporting member includes a step of coating said bonding agent on the areas extended out from the bonding face of said recording element base plate and said supporting member.

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11. A method for manufacturing an ink jet recording head according to Claim 10, wherein said recording element base plate is formed substantially in rectangle, and the extended areas from said bonding 25 face are the areas extended in the widthwise direction perpendicular to the longitudinal direction both on the edge portions in said longitudinal direction of said

recording element base plate formed substantially in rectangle.

12. A method for manufacturing an ink jet  
5 recording head according to Claim 10, wherein said recording element base plate is structured with the array of plural discharge ports for discharging said recording liquid, and said extended areas from the bonding face are the areas extended out in the  
10 longitudinal direction of said discharge port array formed by plural discharge ports.

13. A method for manufacturing an ink jet  
recording head according to Claim 8, further comprising  
15 the following steps of:

holding said recording element base plate by use of a vacuum adsorption chuck in the step of forcing out the bonding agent from the bonding face of said recording element base plate and said supporting member  
20 by compressing said recording element base plate and said supporting member to each other; and

irradiating ultraviolet rays again to the portions blocked from said ultraviolet rays due to the existence of said vacuum adsorption chuck, among those portions  
25 of said bonding agent forced out from said bonding face in said step of positioning and fixing, after moving said vacuum adsorption chuck outside the irradiating

area of said ultraviolet rays subsequent to the completion of said step of positioning and fixing.

14. A method for manufacturing an ink jet recording head according to Claim 13, wherein the portions of said bonding agent blocked from said ultraviolet rays due to the existence of said vacuum adsorption chuck are the portions arranged in said supply ports.

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15. A method for manufacturing an ink jet recording head according to Claim 8, further comprising the step of:

thermally hardening said entirely coated bonding agent by further application of heating after said bonding agent is hardened by the irradiation of ultraviolet rays to the bonding agent forced out from said bonding face.

20 16. A method for manufacturing an ink jet recording head according to Claim 8, wherein the coating thickness of said bonding agent between said recording element base plate and said supporting member is 4 to 10  $\mu$ m.

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17. A method for manufacturing an ink jet recording head according to Claim 8, wherein a

supporting member is arranged to inclusively exist between said wiring base plate and said supporting member to hold and fix said wiring base plate to said supporting member.

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18. A method for manufacturing an ink jet recording head according to Claim 8, wherein the width each supply flow path to be formed for said supporting member is made smaller than the width of each supply 10 port formed for said recording element base plate.